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Date: December 22, 2003  
To: Examiner: Knauss, Scott A.  
Art Unit: 2874  
Fax No.: 703-872-9306  
From: Stephen P. Burr  
Subject: U.S. Application Ser. No. 10/022,181  
Filed: December 13, 2001  
Conf. No.: 1080  
Title: FIBER ARRAY, AND WAVEGUIDE DEVICE  
Our Ref.: 939\_035

You should receive 9 page(s) including this cover sheet. If you do not receive all pages, please call (315) 233-8300.

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- |   |                |
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| • Transmittal (in duplicate)            | <u>2</u> pages |
| • Request for Reconsideration (5 pages) | <u>6</u> pages |
| • This Cover Sheet                      | <u>1</u> page  |

Total Pages

9

  
Janet M. Stevens

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**PATENT AMENDMENT TRANSMITTAL**

(Provisions of 37 CFR 1.136 Apply)

Application Number	10/022,181	Filing Date	December 13, 2001
Group Art Unit	2874	Examiner Name	Knauss, Scott A.
Confirmation No.	1080	Attorney Docket No.	939_035
Inventor(s)	Akira MATSUMOTO, Masashi FUKUYAMA		
Invention:	FIBER ARRAY, AND WAVEGUIDE DEVICE		

Transmitted herewith is an Amendment in the above-identified application. The fee has been calculated as follows:

**CLAIMS AS AMENDED**

(1)	(2) Claims Remaining After Amendment	(3)	(4) Highest Number Previously Paid	(5) No. of Extra Claims Present	(6) Rate (Large Entry)	(7) Additional Fee
TOTAL CLAIMS	2	MINUS	20	0	\$18.00	\$00.00
INDEP. CLAIMS	2	MINUS	3	0	\$86.00	\$00.00
<b>TOTAL ADDITIONAL FEE FOR THIS AMENDMENT</b>						\$00.00

**EXTENSION OF TERM**

- ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.
- ☐ This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application. The requested extension and appropriate non-small entry fee are as follows:
- ☐ One Month (37 CFR 1.17(a)(1)) ..... \$110.00
  - ☐ Two Month (37 CFR 1.17(a)(2)) ..... \$420.00
  - ☐ Three Month (37 CFR 1.17(a)(3)) ..... \$950.00

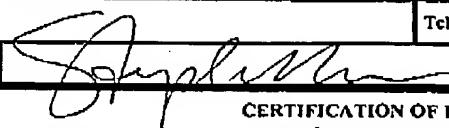
**TOTAL FEES DUE**

- ☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount is reduced by one-half, and the resulting fee is:

**FEE PAYMENT**

- ☒ No additional fee is required.
- ☐ A check in the amount of \$\_\_\_\_\_ is enclosed.
- ☐ Charge Deposit Account 50-1446 in the amount of \$. Enclosed is a duplicate copy of this sheet.
- ☒ Please charge any fees which may be required, or credit any overpayment, to Deposit Account 50-1446.

**Submitted By:**

Name (Print Type)	Stephen P. Burr	Reg. No.	32,970	Customer No.	025191
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Signature				Date	December 22, 2003

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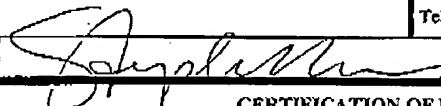
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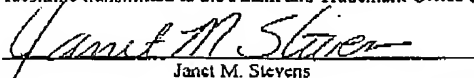
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Janet M. Stevens

Practitioner's Docket No.: 939\_035

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Akira MATSUMOTO, Masashi FUKUYAMA

Ser. No.: 10/022,181

Group Art Unit: 2874

Filed: December 13, 2001

Examiner: Knauss, Scott A.

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*Janet M. Stevens*  
Janet M. Stevens

REQUEST FOR RECONSIDERATION

Sir:

The following remarks are in response to the Final Office Action mailed October 1, 2003. Claims 3 and 4 are pending herein.

Examiner Knauss is thanked for courtesies extended to Applicants' representative (Steven Caldwell) during a telephonic interview conducted on December 16, 2003. During the interview, Examiner Knauss stated that Applicants' arguments were reasonable, but requested that the arguments be submitted in writing for further review. The following remarks are a detailed reiteration of the points discussed during the interview.

1. Claim 3 was rejected under §103(a) over Watanabe et al. in view of JP 05-264844 (JP '844). This rejection is respectfully traversed.

Pending independent claim 3 recites that bare and jacketed portions of first and second optical fibers of a ribbon-shaped optical fiber multi-core line are housed in a fiber array. That is, all of the first and second optical fibers are included in the same ribbon. While the first and second optical fiber bare portions are received in V-grooves in a substrate,

the first and second optical fiber jacket portions are housed in a jacketed optical fiber section of the array. The first optical fibers transmit optical signals and the second optical fibers, which are disposed on at least the outermost sides of the fiber array, are non-optical signal transmitting fibers (e.g., dummy fibers) and extend over the entire length of the optical fiber array.

The PTO has the burden of proving a *prima facie* case of obviousness. *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1530 (Fed. Cir. 1993); see *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). When relying upon numerous references or a modification of prior art, it is incumbent upon the Examiner to identify some suggestion to combine the references or make the modification. *In re Jones*, 958 F.2d 347, 351, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992) (stating that there must be some suggestion to combine, "either in the references themselves or in the knowledge generally available to one of ordinary skill in the art"); see *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 292, 227 USPQ 657, 664 (Fed. Cir. 1985).

The PTO alleges that, with the exception of non-optical signal transmitting fibers positioned on the outermost side of the array, Watanabe discloses the basic structure of the fiber array recited in pending claim 3. The PTO is relying upon JP '844 for disclosure that it was known to use non-optical signal transmitting fibers positioned on the outermost sides of an array of fibers. The PTO's conclusion in the Office Action appears to be that "it would have been obvious to one of ordinary skill in the art to modify the fiber array of Watanabe so that no signals travel through the outermost fibers on the array, for the purpose of using these fibers to absorb pressure from retaining member 23" (see Office Action page 3).

Applicants respectfully disagree with the PTO's position in the Office Action, because skilled artisans would not have been motivated to modify Watanabe's fiber array as alleged in the Office Action, especially "for the purpose of using these fibers to absorb pressure from retaining member 23." As will become clearly evident from the discussion that follows, Watanabe already addresses the problem of excessive pressure application against the optical fibers from pressing member 23 by (i) spreading the pressure applied from pressing member 23 over 16 optical fibers positioned in V-grooves of a relatively wide substrate, and (ii) forming a round portion (A) in the rear end side 25 of pressing member 23. Moreover, even if one were to completely ignore Watanabe's built-in pressure absorbing mechanical means

discussed above and attempt to modify Watanabe's fiber array "so that no signals travel through the outermost fibers on the array" (as discussed in the Office Action), the resultant structure would include only bare dummy fibers positioned in the outer V-grooves in the substrate, and would not disclose or suggest that the second, non-optical signal transmitting fibers include both bare and jacketed portions, as claimed. Nor would the structure resulting from the PTO's alleged combination of Watanabe and JP '844 include "an array of bare and jacketed portions of first and second optical fibers of a ribbon-shaped optical fiber multi-core line," as claimed. That is, all of the first and second optical fibers would not be included in the same ribbon structure.

There is no *prima facie* case of obviousness here since there is no suggestion in the art to combine the references as asserted by the PTO. Fig. 19 of Watanabe shows a 16-channel optical fiber array substrate 21 used in an optical connector device. That is, 16 V-grooves 22, each of which house a bare optical fiber, are present in substrate 21. Pressing member 23 presses down upon portions of the 16 optical fibers housed in the V-grooves of substrate 21. As such, skilled artisans would understand that Watanabe's use of at least a 16-channel array (some embodiments appear to show a 32-channel array) acts as a pressure-mitigating mechanism functioning to maintain the integrity of the optical fibers by sharing or spreading the pressure applied from pressing member 23 over a relatively large number of optical fibers.

A further stress-mitigating mechanism is shown in Fig. 6 of Watanabe, which is a round portion (A) in the rear end side 25 of pressing member 23 (see column 20, lines 13-23). Watanabe discloses that "by forming a round part to lighten the fitting with respect to optical fibers at the fiber pressing surface 26 at the rear end side 25 of the pressing member 23, optical fibers can be prevented from being interrupted or broken at the position (in the drawing "B") where the rear end side of the pressing member 23 is brought into contact with the optical fibers as shown in Fig. 21" (see column 27, lines 22-28). Consequently, it is clear that, upon reading the Watanabe patent, skilled artisans would understand that Watanabe teaches that the problem of excessive pressure being applied to the optical fibers from pressing member 23 should be dealt with by (i) sharing or spreading the pressure applied from pressing member 23 over a large number of optical fibers in the array, and (ii) forming a round portion (A) in the rear end side 25 of pressing member 23.

JP '844 discloses a structure that deals with reducing the pressure applied to optical fibers from a cover plate in a 2-channel optical fiber array. With reference to Fig. 3 of JP '844, it is disclosed in JP '844 that 2-channel array substrates are typically too narrow to prevent undue stress on the optical fibers from the uneven application of pressure from retaining member 26. JP '844 teaches that this narrow 2-channel array base problem should be solved by widening the base to provide a larger surface area in which to provide 2 additional fibers (i.e., pressure bearing bar materials 24) in order to spread the pressing stress from retaining member 26 over 4 fibers instead of 2 fibers. That is, as shown in JP '844 Fig. 2, the wider base 22 includes four V-grooves with dummy optical fibers positioned in the outer V-grooves.

While JP '844 discloses a wider 2-channel fiber array substrate to spread pressure applied from retaining member 26 over 2 additional fibers (4 total fibers in the array), Watanabe discloses a 16-channel fiber array in which pressure from pressing member 23 is spread over 16 optical fibers. Watanabe's 16-channel array, therefore, represents a four-fold increase in the number of fibers that JP '844 discloses should be used to lessen the stress application on the fibers in a 2-channel array. Thus, skilled artisans would have had no reason to change any of Watanabe's live optical fibers to dummy fibers for any reason, let alone "for the purpose of using these fibers to absorb pressure from retaining member 23" (as alleged in the Office Action). Indeed, such a modification would produce no extra mechanical benefits in addition to the pressure-sharing benefits already attained by using 16 live optical fibers.

Moreover, changing some of Watanabe's live optical fibers to dummy fibers would result in the loss of two optical signal-transmitting channels in Watanabe's array, again, without realizing any additional mechanical benefits other than those already disclosed in Watanabe. The loss of optical signal-transmitting channels is something that Watanabe clearly did not contemplate. For example, Watanabe employs other mechanical features to prevent the loss of optical signal-transmitting channels in the array structure. Instead of using dummy fibers in the array structure, Watanabe teaches that unwanted pressure application onto the optical fibers from pressing member 23 is dealt with by forming a round portion (A) in the rear and side 25 of pressing member 23 (again, shown in Fig. 6 of Watanabe). It would have been clear to skilled artisans, therefore, that Watanabe seeks to prevent damage to the

optical fibers from excessive forces applied by pressing member 23 while, at the same time, ensuring that an optimum or desired optical signal output from the fiber array is maintained. That is, the loss of optical signal-transmitting channels is clearly something that Watanabe did not even contemplate.

Furthermore, even if one were to ignore Watanabe's pressure reducing mechanisms already in place and attempt to combine the disclosures of Watanabe and JP '844 (Applicants submit that one would not have been motivated to do this), the resultant structure would include only bare dummy fibers positioned in the outer V-grooves in the substrate. As discussed above, pending claim 3 recites that the second, non-optical signal transmitting fibers (e.g., dummy fibers) include both bare and jacketed portions. Since JP '844 does not disclose or suggest that fibers having jacketed portions are suitable for use as the pressure bearing components, skilled artisans would have had no reason to substitute dummy fibers that include jacketed portions for the bare fibers shown in the drawings of JP '844. As such, even if Watanabe and JP '844 were combined as asserted in the Office Action, there would still be no disclosure or suggestion of non-optical signal transmitting second optical fibers that include a jacketed portion, as recited in pending claim 3.

Moreover, as a corollary to the above point, because the combination of Watanabe and JP '844 (as asserted in the Office Action) would not include non-optical signal transmitting second optical fibers including jacketed portions (as claimed), there would also be no disclosure or suggestion of "an array of bare and jacketed portions of first and second optical fibers of a ribbon-shaped optical fiber multi-core line," as recited in pending claim 3. That is, all of the first and second optical fibers would not be included in "a ribbon-shaped optical fiber multi-core line" (i.e., the first and second fibers are contained in the same ribbon), as claimed.

In view of all of the foregoing, reconsideration and withdrawal of the §103(a) rejection over Watanabe in view of JP '844 are respectfully requested.

2. Claim 4 was rejected under §103(a) over Watanabe et al. in view of JP '844 and further in view of JP 08-114722 (JP '722). This rejection is respectfully traversed. Similar to pending independent claim 3 discussed above, pending claim 4 recites that an optical fiber array includes bare and jacketed fiber sections housing bare and jacketed portions of first and second optical fibers on a V-grooved substrate. The first optical fibers



transmit optical signals and the second optical fibers are non-signal transmitting optical fibers and are disposed on at least the outermost sides of the fiber array. Pending claim 4 differs from pending claim 3 in that it recites that the first and second optical fibers are optically connected to a waveguide chip and sealed in a package, and that the second optical fibers are disposed from the fiber array to at least the interface of the package.

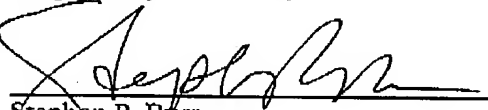
The PTO is apparently relying upon JP '722 for disclosure that it was known to connect a fiber array to a waveguide chip and seal the array in a package. It is clear, however, that JP '722 does not cure the above-discussed deficient disclosure and/or lack of motivation to combine Watanabe and JP '844.

In view of all of the foregoing, reconsideration and withdrawal of the §103(a) rejection over Watanabe in view of JP '722 are respectfully requested.

If Examiner Knauss believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, he is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

  
Stephen P. Burr  
Reg. No. 32,970

December 22, 2003  
Date

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